



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-0766; Product Identifier 2017-NM-046-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. This proposed AD was prompted by an evaluation by the design approval holder (DAH) indicating that the gore web lap splices of the aft pressure bulkhead are subject to widespread fatigue damage (WFD). This proposed AD would require repetitive inspections of the gore webs, gore web lap splices, and repair webs, as applicable, of the aft pressure bulkhead, and applicable on-condition actions. We are proposing this AD to address the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0766.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0766; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Lu Lu, Aerospace Engineer, Airframe Section, FAA, Seattle Aircraft Certification Office (ACO) Branch, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6478; fax: 425-917-6590; email: [lu.lu@faa.gov](mailto:lu.lu@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section.

Include “Docket No. FAA-2017-0766; Product Identifier 2017-NM-046-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

## **Discussion**

Fatigue damage can occur locally, in small areas or structural design details, or globally, in widespread areas. Multiple-site damage is widespread damage that occurs in a large structural element such as a single rivet line of a lap splice joining two large skin panels. Widespread damage can also occur in multiple elements such as adjacent frames or stringers. Multiple-site damage and multiple-element damage cracks are typically too small initially to be reliably detected with normal inspection methods. Without intervention, these cracks will grow, and eventually compromise the structural integrity of the airplane. This condition is known as WFD. It is associated with general degradation of large areas of structure with similar structural details and stress levels. As an airplane ages, WFD will likely occur, and will certainly occur if the airplane is operated long enough without any intervention.

The FAA’s WFD final rule (75 FR 69746, November 15, 2010) became effective on January 14, 2011. The WFD rule requires certain actions to prevent structural failure due to WFD throughout the operational life of certain existing transport category airplanes and all of

these airplanes that will be certificated in the future. For existing and future airplanes subject to the WFD rule, the rule requires that DAHs establish a limit of validity (LOV) of the engineering data that support the structural maintenance program. Operators affected by the WFD rule may not fly an airplane beyond its LOV, unless an extended LOV is approved.

The WFD rule (75 FR 69746, November 15, 2010) does not require identifying and developing maintenance actions if the DAHs can show that such actions are not necessary to prevent WFD before the airplane reaches the LOV. Many LOVs, however, do depend on accomplishment of future maintenance actions. As stated in the WFD rule, any maintenance actions necessary to reach the LOV will be mandated by ADs through separate rulemaking actions.

In the context of WFD, this action is necessary to enable DAHs to propose LOVs that allow operators the longest operational lives for their airplanes, and still ensure that WFD will not occur. This approach allows for an implementation strategy that provides flexibility to DAHs in determining the timing of service information development (with FAA approval), while providing operators with certainty regarding the LOV applicable to their airplanes.

We have received reports of cracks in critical fastener rows of the gore web lap splices that are outside of the inspection area specified in AD 2012-18-13 R1, Amendment 39-17429 (78 FR 27020, May 9, 2013) (“AD 2012-18-13 R1”), which extends approximately 7 inches radially outboard from the center of the aft pressure bulkhead.

Cracks in the critical lap splice fastener rows of the hidden forward gore web were found on airplanes with 37,000 to 66,000 total flight cycles. Cracks in the critical lap splice fastener rows of the visible aft gore web were also found on airplanes with 42,000 to 62,000 total flight cycles. Cracking in the gore web lap splices of the aft

pressure bulkhead could result in possible rapid decompression and loss of structural integrity of the airplane.

### **Related AD**

AD 2012-18-13 R1 requires repetitive inspections to detect cracking in the web of the aft pressure bulkhead at body station 1016 at the aft fastener row attachment to the “Y” chord, various inspections for discrepancies at the aft pressure bulkhead, and related investigative and corrective actions if necessary. The inspection areas of AD 2012-18-13 R1 and the proposed inspections of this proposed AD are both related to the aft pressure bulkhead. However, this proposed AD would require separate inspections on a subset of the aft pressure bulkhead inspections required by AD 2012-18-13 R1.

### **Related Service Information under 1 CFR part 51**

We reviewed Boeing Alert Service Bulletin 737-53A1355, dated March 10, 2017. The service information describes procedures for repetitive inspections of the gore web in Zone 1 (i.e., inspections around fastener locations in the gore web lap splices and around fastener locations in the apex area outside the gore web lap splices) and gore web lap splices in Zone 2 (i.e., inspections around fastener locations in the gore web lap splices) of the aft pressure bulkhead, and applicable on-condition actions. The service information also describes, for airplanes with an existing single gore web repair, procedures for repetitive inspections of the gore web (i.e., inspections around fastener locations in the gore web lap splices) and repair webs (i.e., inspections around fastener locations in the gore web lap splices and around fastener locations in the apex area outside the gore web lap splices); and, for airplanes with an existing all gore web repair, procedures for repetitive inspections of the repair webs (i.e., inspections around fastener locations in the repair gore web lap splices and around fastener locations in the apex area outside the repair gore web lap splices); and procedures for applicable on-condition actions. This

service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined that the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require accomplishment of the actions identified as "RC" (required for compliance) in the Accomplishment Instructions of the service information described previously, except for differences between this proposed AD and the service information that are identified in the regulatory text of this proposed AD. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0766.

### **Difference between Proposed AD and Service Bulletin**

Boeing Alert Service Bulletin 737-53A1355, dated March 10, 2017, specifies to contact the manufacturer for certain instructions, but this proposed AD would require using repair methods, modification deviations, and alteration deviations in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

### **Costs of Compliance**

We estimate that this proposed AD affects 281 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	46 work-hours X \$85 per hour = \$3,910 per inspection cycle	\$0	\$3,910 per inspection cycle	\$1,098,710 per inspection cycle

We estimate the following costs to do any necessary on-condition actions that would be required based on the results of the proposed inspection. We have no way of determining the number of aircraft that might need these on-condition actions:

### On-condition costs

Action	Labor cost	Parts cost	Cost per product
Inspection of previous single gore web repair	8 work-hours X \$85 per hour = \$680	\$0	\$680
Inspection of previous all gore web repair	10 work-hours X \$85 per hour = \$850	\$0	\$850

We have received no definitive data that would enable us to provide cost estimates for the repairs specified in this proposed AD.

### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This proposed AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:



## **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**The Boeing Company** : Docket No. FAA-2017-0766; Product Identifier 2017-NM-046-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category.

#### **(d) Subject**

Air Transport Association (ATA) of America Code 53; Fuselage.

#### **(e) Unsafe Condition**

This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the gore web lap splices of the aft pressure bulkhead are subject to widespread fatigue damage (WFD). We are issuing this AD to detect and correct cracking in the gore webs, gore web lap splices, and repair webs of the aft pressure bulkhead, which could result in possible rapid decompression and loss of structural integrity.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions for Group 1 Airplanes**

For airplanes identified as Group 1 in Boeing Alert Service Bulletin 737-53A1355, dated March 10, 2017: Within 120 days after the effective date of this AD, inspect the airplane, using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

**(h) Actions Required for Compliance**

Except as required by paragraph (i) of this AD: For airplanes identified as Group 2 in Boeing Alert Service Bulletin 737-53A1355, dated March 10, 2017, at the applicable times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1355, dated March 10, 2017, do all applicable actions identified as required for compliance (“RC”) in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1355, dated March 10, 2017.

**(i) Exceptions to Service Information Specifications**

(1) Where paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1355, dated March 10, 2017, uses the phrase “after the original issue date of this service bulletin,” for purposes of determining compliance with the requirements of this AD, the phrase “after the effective date of this AD” must be used.

(2) Although Boeing Service Bulletin Boeing Alert Service Bulletin 737-53A1355, dated March 10, 2017, specifies to contact Boeing for repair instructions, and specifies that action as “RC” (Required for Compliance), this AD requires repair before further flight using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles Aircraft Certification Office (ACO) Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k)(2) of this AD. Information may be emailed to: 9-ANM-LAACO-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO Branch, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) Except as required by paragraph (i)(2) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (j)(4)(i) and (j)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

**(k) Related Information**

(1) For more information about this AD, contact Lu Lu, Aerospace Engineer, Airframe Section, FAA, Seattle Aircraft Certification Office (ACO) Branch, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6478; fax: 425-917-6590; email: lu.lu@faa.gov.

(2) For information about AMOCs, contact George Garrido, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5232; fax: 562-627-5210; email: george.garrido@faa.gov.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on July 26, 2017.

Jeffrey E. Duven,  
Director,  
System Oversight Division,  
Aircraft Certification Service.

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